Part 1 #10

SEQUENCE LISTING

<110> INSERM

<120> Use of ULIP proteins in the diagnosis and therapy of cancers and paraneoplastic neurological syndromes

<130> BET 99/0689

<140> US 09/367,496
<141> 1999-11-24

<150> FR 97 01 961
<151> 1997-02-19

<160> 8

<170> PatentIn Ver. 2.1

<210> 1
<211> 1817
<212> DNA
<213> Mus musculus

<400> 1
cttcctcccg ccccccggag agatgtctta tcaggggaag aaaaatattc cacccatcac 60
gagcgatcgt cttctgatca aaggtggcaa gattgtgaat gatgaccagt ccttctatgc 120
agacatatac atggaagatg ggttgatcaa gcaaatagga gaaaacctga ttgtaccagg 180
aggggtgaag accatcgaag cccactccag aatggtgatt cccggaggaa ttgacgtgca 240
tactcgcttc cagatgcctg accagggaat gacatccgct gatgacttct tccagggaac 300
caaggcggcc ctggccgggg gaaccaccat gatcattgac catgttgttc ctgagcccgg 360
gacgagccta ttggctgcct ttgatcagtg gagggagtgg gctgacagca agtcctgctg 420
tgactattcg ctgcacgtgg acatcactga gtggcacaag ggcatccagg aggagatgga 480
agctctggtg aaggaccacg gggtaaactc cttcctcgtg tacatggctt tcaaagatcg 540
attccagctg acggattccc agatctatga agtgctgagc gtgatccggg atatcggtgc 600
catagctcaa gtccacgcag agaatggtga catcattgct gaggcacagc agaggatcct 660
ggatctgggc atcacgggcc ccgagggaca cgtgttgagc cggccagagg aggtcgaggc 720
tgaagctgtg aaccggtcca tcactattgc caaccagacc aactgccctc tgtatgtcac 780
caaagtgatg cccaagagtg cggctgaagt catcgctcag gcacggaaga agggaactgt 840
ggtgtatggt gagcccatca cggccagcct ggggactgat ggctctcatt actggagcaa 900
gaactgggcc aaggctgcgg cctttgtcac ctccccaccc ttgagccccg acccaaccac 960
tccagacttt ctcaactcgt tgctgtcctg tggagacctc caagtcactg gcagtgccca 1020
ctgcaccttc aacactgccc agaaggctgt ggggaaggac aacttcacct tgattcccga 1080
gggcaccaac ggcactgagg agcggatgtc tgtcatttgg gataaagctg tggtcactgg 1140
gaagatggat gagaatcagt ttgtggctgt gaccagcacc aacgcagcca aagtcttcaa 1200
cctttacccc cggaaaggtc gcatctcggt gggatctgat gctgacttgg tcatctggga 1260
ccctgacagt gtgaagacca tctctgccaa gacacacaac agtgctcttg agtacaacat 1320
ctttgaaggc atggagtgtc gcggctcccc actggtggtc atcagccagg gcaagattgt 1380
cctggaggac ggcacacttc atgtcactga aggctcagga cgctacattc cccggaagcc 1440
cttccctgac tttgtgtaca aacgcatcaa agcaaggagc aggctggctg agctgagagg 1500
ggtccctcgt ggcctgtatg acggaccggt atgcgaggtg tctgtgacgc ccaagacggt 1560
gactccagcc tcatcagcta agacatcccc tgccaagcag caggcaccac ctgttcggaa 1620
cctgcaccag tctggattca gcttgtctgg tgctcagatt gacgacaaca ttccccgccg 1680
caccacccag cgcatcgtgg caccccctgg tggccgtgcc aacatcacca gcctgggcta 1740
aagcccctag gcctgcaggc cacttgggga tgggggatgg gacacctgag gacattctga 1800
gacttccttt cttccat 1817

<210> 2
<211> 572
<212> PRT
<213> Mus musculus

<400> 2

```
Met Ser Tyr Gln Gly Lys Lys Asn Ile Pro Pro Ile Thr Ser Asp Arg
  1               5                  10                  15

Leu Leu Ile Lys Gly Gly Lys Ile Val Asn Asp Asp Gln Ser Phe Tyr
             20                  25                  30

Ala Asp Ile Tyr Met Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn
         35                  40                  45

Leu Ile Val Pro Gly Gly Val Lys Thr Ile Glu Ala His Ser Arg Met
     50                  55                  60

Val Ile Pro Gly Gly Ile Asp Val His Thr Arg Phe Gln Met Pro Asp
 65                  70                  75                  80

Gln Gly Met Thr Ser Ala Asp Asp Phe Phe Gln Gly Thr Lys Ala Ala
                 85                  90                  95

Leu Ala Gly Gly Thr Thr Met Ile Ile Asp His Val Val Pro Glu Pro
            100                 105                 110

Gly Thr Ser Leu Leu Ala Ala Phe Asp Gln Trp Arg Glu Trp Ala Asp
        115                 120                 125

Ser Lys Ser Cys Cys Asp Tyr Ser Leu His Val Asp Ile Thr Glu Trp
    130                 135                 140

His Lys Gly Ile Gln Glu Glu Met Glu Ala Leu Val Lys Asp His Gly
145                 150                 155                 160

Val Asn Ser Phe Leu Val Tyr Met Ala Phe Lys Asp Arg Phe Gln Leu
                165                 170                 175

Thr Asp Ser Gln Ile Tyr Glu Val Leu Ser Val Ile Arg Asp Ile Gly
            180                 185                 190

Ala Ile Ala Gln Val His Ala Glu Asn Gly Asp Ile Ile Ala Glu Ala
        195                 200                 205

Gln Gln Arg Ile Leu Asp Leu Gly Ile Thr Gly Pro Glu Gly His Val
    210                 215                 220

Leu Ser Arg Pro Glu Glu Val Glu Ala Glu Ala Val Asn Arg Ser Ile
225                 230                 235                 240

Thr Ile Ala Asn Gln Thr Asn Cys Pro Leu Tyr Val Thr Lys Val Met
                245                 250                 255

Pro Lys Ser Ala Ala Glu Val Ile Ala Gln Ala Arg Lys Lys Gly Thr
            260                 265                 270
```

```
Val Val Tyr Gly Glu Pro Ile Thr Ala Ser Leu Gly Thr Asp Gly Ser
        275                 280                 285

His Tyr Trp Ser Lys Asn Trp Ala Lys Ala Ala Ala Phe Val Thr Ser
    290                 295                 300

Pro Pro Leu Ser Pro Asp Pro Thr Thr Pro Asp Phe Leu Asn Ser Leu
305                 310                 315                 320

Leu Ser Cys Gly Asp Leu Gln Val Thr Gly Ser Ala His Cys Thr Phe
                325                 330                 335

Asn Thr Ala Gln Lys Ala Val Gly Lys Asp Asn Phe Thr Leu Ile Pro
            340                 345                 350

Glu Gly Thr Asn Gly Thr Glu Glu Arg Met Ser Val Ile Trp Asp Lys
        355                 360                 365

Ala Val Val Thr Gly Lys Met Asp Glu Asn Gln Phe Val Ala Val Thr
    370                 375                 380

Ser Thr Asn Ala Ala Lys Val Phe Asn Leu Tyr Pro Arg Lys Gly Arg
385                 390                 395                 400

Ile Ser Val Gly Ser Asp Ala Asp Leu Val Ile Trp Asp Pro Asp Ser
                405                 410                 415

Val Lys Thr Ile Ser Ala Lys Thr His Asn Ser Ala Leu Glu Tyr Asn
            420                 425                 430

Ile Phe Glu Gly Met Glu Cys Arg Gly Ser Pro Leu Val Val Ile Ser
        435                 440                 445

Gln Gly Lys Ile Val Leu Glu Asp Gly Thr Leu His Val Thr Glu Gly
    450                 455                 460

Ser Gly Arg Tyr Ile Pro Arg Lys Pro Phe Pro Asp Phe Val Tyr Lys
465                 470                 475                 480

Arg Ile Lys Ala Arg Ser Arg Leu Ala Glu Leu Arg Gly Val Pro Arg
                485                 490                 495

Gly Leu Tyr Asp Gly Pro Val Cys Glu Val Ser Val Thr Pro Lys Thr
            500                 505                 510

Val Thr Pro Ala Ser Ser Ala Lys Thr Ser Pro Ala Lys Gln Gln Ala
        515                 520                 525

Pro Pro Val Arg Asn Leu His Gln Ser Gly Phe Ser Leu Ser Gly Ala
    530                 535                 540

Gln Ile Asp Asp Asn Ile Pro Arg Arg Thr Thr Gln Arg Ile Val Ala
545                 550                 555                 560

Pro Pro Gly Gly Arg Ala Asn Ile Thr Ser Leu Gly
                565                 570
```

<210> 3
<211> 2297
<212> DNA
<213> Mus musculus

<400> 3
gctgtctgtc ttcagcgccc tcctctcgcc ctgcctctcc ctcctcctcc cgccctcctt 60
gccaagccgg gcggtgcagg cagccggagc agcggcggcg ggccgagcag cggggagtgg 120
gcagcggtgg gagccgagct tctgtccttt ctttcatccc tccctggcct ttgtcgccgc 180
tctcacgagt agcgccgccg ggagagaccc gggtagagcg ccaggcagac gttagttcca 240
gcggccgggc ggagggctcc agaggggcca tgtctcatca ggggaagaag agcatcccgc 300
acatcaccag tgaccggctc ctcatcagag gtggacgcat catcaatgat gaccagtcct 360
tctacgccga tgtctaccta gaagatggac tcataaaaca aataggagag aacctgattg 420
ttcctggtgg agtgaagacc atcgaggcga atggccgaat ggtcattccc ggtggcattg 480
atgtcaacac ttacctgcag aagccctccc agggcatgac ctcggctgat gacttcttcc 540
agggcactaa agcagcgctg gcaggtggaa ccacgatgat cattgaccac gttgttcctg 600
aacctgggtc cagcttgttg acttcctttg agaaatggca cgaagcagca gacaccaaat 660
cctgctgtga ctattccctc cacgtggaca tcacaagctg gtatgatggt gttcgggaag 720
agctggaggt gctggtgcag gacaaaggtg tcaactcctt ccaagtctac atggcgtata 780
aggacctgta ccagatgtct gacagccagc tgtatgaagc cttcaccttc cttaagggtt 840
tgggagctgt gatcttagtc catgcagaaa atggagattt gatagctcag gaacaaaaac 900
ggatcctgga gatgggcatc acgggtcccg agggtcatgc tctgagcaga cccgaggagc 960
tggaggccga ggctgtgttc cgggctattg ccattgcagg ccggatcaat tgccctgtgt 1020
acatcaccaa ggtcatgagc aagagtgcag cggacatcat cgcactggcc aggaagaaag 1080
gccctcttgt cttcggtgag cccatagccg ccagcctggg aaccgatggc acccactact 1140
ggagcaagaa ctgggccaag gcagctgcat ttgtgacttc ccctcccctg agcccagacc 1200
ccaccactcc tgactacttg acctccttgc tggcctgtgg agacttgcag gtcacaggta 1260
gtggccactg tccctacagt attgctcaga aggctgtggg caaggacaac ttcactctga 1320
tccctgaggg tgtcaatggt atagaagagc ggatgaccgt tgtctgggac aaggcagtgg 1380
ctactggcaa gatggatgag aaccagtttg tagccgtcac cagcaccaac gcagccaaga 1440
tcttcaacct gtacccgagg aaaggtcgga tcgctgtggg ctccgatgct gacgtagtca 1500
tctgggaccc agataagatg aagaccataa cagccaaaag ccataaatca actgtggagt 1560
acaacatctt tgagggcatg gagtgccacg gctccccct ggtggtcatc agtcagggca 1620
agattgtctt tgaggatgga aacatcagtg tcagcaaggg catgggccgc ttcatccctc 1680
ggaagccatt cccagagcat ctctaccagc gtgtcaggat cagaagcaag gttttcgggt 1740
tgcatagtgt ttccaggggc atgtacgatg ggcctgtgta cgaggtgcca gctacaccca 1800
aacatgctgc tcctgctcct tctgccgaat cctcgccttc taaacaccaa cccccaccca 1860
tccggaacct ccaccagtcc aacttcagct tatcaggtgc ccagatagat gacaacaatc 1920
caaggcgtac aggccaccgc attgtggcgc cccctggtgg ccgctccaac atcaccagcc 1980
tcggttgacc tcagatgagc cagatatgca agagtgaagg attatgggaa aacgtccatt 2040
ccttttccgt gtttttgaag cccacagttt tagttggtac tgacggaggg gagattgagc 2100
gatgctcttt ccttctctgt ttaggaagaa gtggtactag tgtggtgtgt ttgcctggaa 2160
gtccctcgcc cacagtgtgt gttcacaccg actccacctc agagcatggt gccgtccgtt 2220
ttcccttcct agtgacccca ggtttagcat cgtcctatac tgttccctcc actcctccat 2280
gaccctctga gtgatgg 2297

<210> 4
<211> 572
<212> PRT
<213> Mus musculus

<400> 4
Met Ser His Gln Gly Lys Lys Ser Ile Pro His Ile Thr Ser Asp Arg
1 5 10 15

```
Leu Leu Ile Arg Gly Gly Arg Ile Ile Asn Asp Asp Gln Ser Phe Tyr
             20                  25                  30

Ala Asp Val Tyr Leu Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn
         35                  40                  45

Leu Ile Val Pro Gly Gly Val Lys Thr Ile Glu Ala Asn Gly Arg Met
     50                  55                  60

Val Ile Pro Gly Gly Ile Asp Val Asn Thr Tyr Leu Gln Lys Pro Ser
 65                  70                  75                  80

Gln Gly Met Thr Ser Ala Asp Asp Phe Phe Gln Gly Thr Lys Ala Ala
                 85                  90                  95

Leu Ala Gly Gly Thr Thr Met Ile Ile Asp His Val Val Pro Glu Pro
            100                 105                 110

Gly Ser Ser Leu Leu Thr Ser Phe Glu Lys Trp His Glu Ala Ala Asp
        115                 120                 125

Thr Lys Ser Cys Cys Asp Tyr Ser Leu His Val Asp Ile Thr Ser Trp
    130                 135                 140

Tyr Asp Gly Val Arg Glu Glu Leu Glu Val Leu Val Gln Asp Lys Gly
145                 150                 155                 160

Val Asn Ser Phe Gln Val Tyr Met Ala Tyr Lys Asp Leu Tyr Gln Met
                165                 170                 175

Ser Asp Ser Gln Leu Tyr Glu Ala Phe Thr Phe Leu Lys Gly Leu Gly
            180                 185                 190

Ala Val Ile Leu Val His Ala Glu Asn Gly Asp Leu Ile Ala Gln Glu
        195                 200                 205

Gln Lys Arg Ile Leu Glu Met Gly Ile Thr Gly Pro Glu Gly His Ala
    210                 215                 220

Leu Ser Arg Pro Glu Glu Leu Glu Ala Glu Ala Val Phe Arg Ala Ile
225                 230                 235                 240

Ala Ile Ala Gly Arg Ile Asn Cys Pro Val Tyr Ile Thr Lys Val Met
                245                 250                 255

Ser Lys Ser Ala Ala Asp Ile Ile Ala Leu Ala Arg Lys Lys Gly Pro
            260                 265                 270

Leu Val Phe Gly Glu Pro Ile Ala Ala Ser Leu Gly Thr Asp Gly Thr
        275                 280                 285

His Tyr Trp Ser Lys Asn Trp Ala Lys Ala Ala Ala Phe Val Thr Ser
    290                 295                 300

Pro Pro Leu Ser Pro Asp Pro Thr Thr Pro Asp Tyr Leu Thr Ser Leu
305                 310                 315                 320
```

Leu Ala Cys Gly Asp Leu Gln Val Thr Gly Ser Gly His Cys Pro Tyr
325 330 335

Ser Ile Ala Gln Lys Ala Val Gly Lys Asp Asn Phe Thr Leu Ile Pro
340 345 350

Glu Gly Val Asn Gly Ile Glu Glu Arg Met Thr Val Val Trp Asp Lys
355 360 365

Ala Val Ala Thr Gly Lys Met Asp Glu Asn Gln Phe Val Ala Val Thr
370 375 380

Ser Thr Asn Ala Ala Lys Ile Phe Asn Leu Tyr Pro Arg Lys Gly Arg
385 390 395 400

Ile Ala Val Gly Ser Asp Ala Asp Val Val Ile Trp Asp Pro Asp Lys
405 410 415

Met Lys Thr Ile Thr Ala Lys Ser His Lys Ser Thr Val Glu Tyr Asn
420 425 430

Ile Phe Glu Gly Met Glu Cys His Gly Ser Pro Leu Val Val Ile Ser
435 440 445

Gln Gly Lys Ile Val Phe Glu Asp Gly Asn Ile Ser Val Ser Lys Gly
450 455 460

Met Gly Arg Phe Ile Pro Arg Lys Pro Phe Pro Glu His Leu Tyr Gln
465 470 475 480

Arg Val Arg Ile Arg Ser Lys Val Phe Gly Leu His Ser Val Ser Arg
485 490 495

Gly Met Tyr Asp Gly Pro Val Tyr Glu Val Pro Ala Thr Pro Lys His
500 505 510

Ala Ala Pro Ala Pro Ser Ala Glu Ser Ser Pro Ser Lys His Gln Pro
515 520 525

Pro Pro Ile Arg Asn Leu His Gln Ser Asn Phe Ser Leu Ser Gly Ala
530 535 540

Gln Ile Asp Asp Asn Asn Pro Arg Arg Thr Gly His Arg Ile Val Ala
545 550 555 560

Pro Pro Gly Gly Arg Ser Asn Ile Thr Ser Leu Gly
565 570

<210> 5
<211> 1920
<212> DNA
<213> Mus musculus

<400> 5
gctgactaat atgcttaaat tcagcgggtc gccacgtctg gtcggtacgt ccacgcccgc 60

gcagccccta ccgaggacac tcagcccgcc cgtgtatcag gatgtccttc caaggcaaga 120
agagcattcc ccggataacg agcgaccgcc ttctcatcaa aggtgggaag attgtgaacg 180
atgaccagtc ctttcatgct gatctgtatg tggaagacgg tctgattaaa caaattggag 240
aaaatctcat cgtccctggg ggcatcaaaa ccatcgatgc tcatggcctg atggtgctgc 300
ctgggggagt tgacgttcac acccggctgc agatgcctgt gatgggcatg accccagctg 360
atgatttctg tcagggcacc aaggcggctc tagcaggcgg gaccaccatg atattggacc 420
atgtgtttcc tgacgctggt gtgagcctgc tggcagccta tgagcagtgg cgggacggag 480
cagacagcgc ggcctgctgt gactactcct tacatgtgga cattcctcgc tggcacgaga 540
gcaccaaaga agagctggag gccctagtca gggacaaagg tgtgaactcc ttcctggtct 600
tcatggcata caaggacagg tgccagtgta ctgacggtca gatatatgaa atcttcagcc 660
tcatccggga cctgggagct gtggcccagg tgcacgcaga aaatggggac atcgtggagg 720
aggaacagaa gcgcctgctg gagcaaggca tcactggtcc tgagggccat gtgctcagcc 780
acccagaaga ggtagaggcc gaggctgtgt acagagcagt caccattgcc aagcaggcca 840
actgcccact atacgtcacc aaggtgatga gcaagggtgc agctgacatg gttgcccaag 900
ccaagcgcag gggggtggtc gtctttgggg aacctatcac tgccagcctg ggcactgatg 960
gctcacacta ctggagcaag aactgggcca aggctgcagc ctttgtcact tcaccccta 1020
tcaacccgga ccctactact gcagaccacc tcacctctct gctgtccagt ggggacctcc 1080
aggtgacagg cagtgcccac tgcaccttca ctactgccca gaaggctgtt ggcaaagaca 1140
acttcacact gatccccgag gtagtcaacg gtatagaaga gcgcatgtct gtggtctggg 1200
agaaatgtgt ggcttcaggg aaaatggacg agaatgagtt cgttgccgtg accagcacaa 1260
atgctgccaa aatcttcaat ttttacccca ggaaggggcg tgtggccgtg ggctctgatg 1320
ctgacctggt catctggaac cccagggcca cgaaagtcat ctctgccaag agccataacc 1380
tgaatgtaga gtacaacatc tttgaaggag tggagtgccg aggagtgccc acggtggtca 1440
taagtcaggg cagagtggtg ctggaggacg gaaacctgct tgtcactcca ggggctggcc 1500
gcttcattcc ccggaagacg ttcccggact ttgtctataa gaggataaag gctcgcaaca 1560
ggctagcaga gatccacggt gtgcctcgag gcctgtacga cgggcctgtg catgaagtga 1620
tgttacctgc caagccagga agtggcacac aggcccgtgc atcctgttca ggcaagatct 1680
cagtgccacc cgtgcgcaac ctgcaccagt cggggttcag cctatctggc tctcaggctg 1740
acgatcacat tgccagacgt acggctcaga agatcatggc acccccgga ggacgctcca 1800
acatcacgtc tctttcctag acttggggtc ttggcaagct ggtgctgtcc ccactggcag 1860
ggtgtgggga cgactcacgt cagttagctc cttcctttgt agattgttat tgtgaaaggc 1920

<210> 6
<211> 572
<212> PRT
<213> Mus musculus

<400> 6
Met Ser Phe Gln Gly Lys Lys Ser Ile Pro Arg Ile Thr Ser Asp Arg
1 5 10 15

Leu Leu Ile Lys Gly Gly Lys Ile Val Asn Asp Asp Gln Ser Phe His
20 25 30

Ala Asp Leu Tyr Val Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn
35 40 45

Leu Ile Val Pro Gly Gly Ile Lys Thr Ile Asp Ala His Gly Leu Met
50 55 60

Val Leu Pro Gly Gly Val Asp Val His Thr Arg Leu Gln Met Pro Val
65 70 75 80

Met Gly Met Thr Pro Ala Asp Asp Phe Cys Gln Gly Thr Lys Ala Ala
85 90 95

```
Leu Ala Gly Gly Thr Thr Met Ile Leu Asp His Val Phe Pro Asp Ala
            100                 105                 110

Gly Val Ser Leu Leu Ala Ala Tyr Glu Gln Trp Arg Asp Gly Ala Asp
        115                 120                 125

Ser Ala Ala Cys Cys Asp Tyr Ser Leu His Val Asp Ile Pro Arg Trp
    130                 135                 140

His Glu Ser Thr Lys Glu Glu Leu Glu Ala Leu Val Arg Asp Lys Gly
145                 150                 155                 160

Val Asn Ser Phe Leu Val Phe Met Ala Tyr Lys Asp Arg Cys Gln Cys
                165                 170                 175

Thr Asp Gly Gln Ile Tyr Glu Ile Phe Ser Leu Ile Arg Asp Leu Gly
            180                 185                 190

Ala Val Ala Gln Val His Ala Glu Asn Gly Asp Ile Val Glu Glu Glu
        195                 200                 205

Gln Lys Arg Leu Leu Glu Gln Gly Ile Thr Gly Pro Glu Gly His Val
    210                 215                 220

Leu Ser His Pro Glu Glu Val Glu Ala Glu Ala Val Tyr Arg Ala Val
225                 230                 235                 240

Thr Ile Ala Lys Gln Ala Asn Cys Pro Leu Tyr Val Thr Lys Val Met
                245                 250                 255

Ser Lys Gly Ala Ala Asp Met Val Ala Gln Ala Lys Arg Arg Gly Val
            260                 265                 270

Val Val Phe Gly Glu Pro Ile Thr Ala Ser Leu Gly Thr Asp Gly Ser
        275                 280                 285

His Tyr Trp Ser Lys Asn Trp Ala Lys Ala Ala Ala Phe Val Thr Ser
    290                 295                 300

Pro Pro Ile Asn Pro Asp Pro Thr Thr Ala Asp His Leu Thr Ser Leu
305                 310                 315                 320

Leu Ser Ser Gly Asp Leu Gln Val Thr Gly Ser Ala His Cys Thr Phe
                325                 330                 335

Thr Thr Ala Gln Lys Ala Val Gly Lys Asp Asn Phe Thr Leu Ile Pro
            340                 345                 350

Glu Val Val Asn Gly Ile Glu Glu Arg Met Ser Val Val Trp Glu Lys
        355                 360                 365

Cys Val Ala Ser Gly Lys Met Asp Glu Asn Glu Phe Val Ala Val Thr
    370                 375                 380

Ser Thr Asn Ala Ala Lys Ile Phe Asn Phe Tyr Pro Arg Lys Gly Arg
385                 390                 395                 400
```

```
Val Ala Val Gly Ser Asp Ala Asp Leu Val Ile Trp Asn Pro Arg Ala
                405                 410                 415

Thr Lys Val Ile Ser Ala Lys Ser His Asn Leu Asn Val Glu Tyr Asn
            420                 425                 430

Ile Phe Glu Gly Val Glu Cys Arg Gly Val Pro Thr Val Val Ile Ser
        435                 440                 445

Gln Gly Arg Val Val Leu Glu Asp Gly Asn Leu Leu Val Thr Pro Gly
    450                 455                 460

Ala Gly Arg Phe Ile Pro Arg Lys Thr Phe Pro Asp Phe Val Tyr Lys
465                 470                 475                 480

Arg Ile Lys Ala Arg Asn Arg Leu Ala Glu Ile His Gly Val Pro Arg
                485                 490                 495

Gly Leu Tyr Asp Gly Pro Val His Glu Val Met Leu Pro Ala Lys Pro
            500                 505                 510

Gly Ser Gly Thr Gln Ala Arg Ala Ser Cys Ser Gly Lys Ile Ser Val
        515                 520                 525

Pro Pro Val Arg Asn Leu His Gln Ser Gly Phe Ser Leu Ser Gly Ser
    530                 535                 540

Gln Ala Asp Asp His Ile Ala Arg Arg Thr Ala Gln Lys Ile Met Ala
545                 550                 555                 560

Pro Pro Gly Gly Arg Ser Asn Ile Thr Ser Leu Ser
                565                 570
```

<210> 7
<211> 1690
<212> DNA
<213> Homo sapiens

<400> 7

```
gccgccccta ccagagaccc ccaggagcag gatgtccttc cagggcaaga aaagcatccc 60
ccggatcacg agtgaccgcc ttctgatcag aggtgggagg atcgtgaatg acgaccagtc 120
cttttacgct gatgtgcacg tggaagatgg cttgataaaa caaatcggag aaaacctcat 180
cgtccctggg ggcatcaaga ccattgacgc ccacggcctg atggtccttc ctggtggcgt 240
tgacgtccac acaaggctgc agatgcctgt cctgggcatg acaccggctg acgacttctg 300
tcagggcacc aaggcagcgc tagcaggagg aaccaccatg atcttggacc acgtcttccc 360
cgacacgggt gtgagcctgc tggcggccta cgagcagtgg cgggagcggg cggacagcgc 420
ggcctgctgc gactactccc tgcacgtgga catcacccga tggcatgaga gcatcaagga 480
ggagctggag gccctggtca aggagaaggg tgtgaactcc ttcctggtct tcatggcata 540
caaggaccgg tgccagtgca gcgacagcca gatgtacgag atcttcagca tcatccggga 600
cctgggggcc ttggcccagg tgcacgctga gaacggggac atcgtggagg aggagcagaa 660
gcggttgctg gagctcggca tcactggccc cgagggccac gtgctcagcc accccgagga 720
ggtggaggct gaggcggtgt accgagctgt caccatcgcc aagcaggcaa actgcccgct 780
gtacgtcacc aaggtgatga gcaaggggc ggccgacgcc atcgctcagg ccaagcgcag 840
aggggtggtc gtgtttgggg agcccatcac cgccagcctg ggcaccgacg gttcacacta 900
ctggagcaag aactgggcca aggctgcagc cttcgtcaca tcacccccctg tcaacccaga 960
ccccaccacg gcagaccacc tcacctgctt gctgtccagc ggggacctcc aggtgacagg 1020
```

```
cagcgcccac tgcaccttca ccactgccca gaaggctgtg ggcaaggaca acttcgcgct 1080
gatccccgag ggcaccaacg gcattgagga gcgcatgtcg atggtctggg agaaatgtgt 1140
ggcctctggg aagatggacg agaatgagtt cgtcgcggtg accagtacaa atgctgccaa 1200
aatcttcaat ttttacccaa ggaaggggcg agtggctgtg ggctctgacg ctgacctggt 1260
catatggaac cccaaggcca ccaagatcat ctctgccaag acccacaatc tgaacgtgga 1320
gtacaacatc ttcgagggag tggagtgccg gggagcgcct gccgtggtca taagtcaggg 1380
ccgagtggcg ctggaggacg ggaagatgtt tgtcaccccg ggggcgggcc gcttcgtccc 1440
tcggaaaaca ttcccggact ttgtctacaa gaggatcaaa gctcgcaaca ggctggcgga 1500
gatccacggt gtgccccgtg ggctgtatga cgggcccgtc cacgaggtga tggtgcctgc 1560
caagccaggg agtggcgctc cggcccgcgc gtcctgccca ggcaagatct ccgtgcctcc 1620
tgtgcgcaac ctacatcagt cggggttcag cctatctggg tctcaggctg atgaccacat 1680
cgcccgacgc                                                       1690
```

<210> 8
<211> 572
<212> PRT
<213> Homo sapiens

<400> 8

```
Met Ser Phe Gln Gly Lys Lys Ser Ile Pro Arg Ile Thr Ser Asp Arg
  1               5                  10                  15

Leu Leu Ile Arg Gly Gly Arg Ile Val Asn Asp Asp Gln Ser Phe Tyr
             20                  25                  30

Ala Asp Val His Val Glu Asp Gly Leu Ile Lys Gln Ile Gly Glu Asn
         35                  40                  45

Leu Ile Val Pro Gly Gly Ile Lys Thr Ile Asp Ala His Gly Leu Met
     50                  55                  60

Val Leu Pro Gly Gly Val Asp Val His Thr Arg Leu Gln Met Pro Val
 65                  70                  75                  80

Leu Gly Met Thr Pro Ala Asp Asp Phe Cys Gln Gly Thr Lys Ala Ala
                 85                  90                  95

Leu Ala Gly Gly Thr Thr Met Ile Leu Asp His Val Phe Pro Asp Thr
            100                 105                 110

Gly Val Ser Leu Leu Ala Ala Tyr Glu Gln Trp Arg Glu Arg Ala Asp
        115                 120                 125

Ser Ala Ala Cys Cys Asp Tyr Ser Leu His Val Asp Ile Thr Arg Trp
    130                 135                 140

His Glu Ser Ile Lys Glu Glu Leu Glu Ala Leu Val Lys Glu Lys Gly
145                 150                 155                 160

Val Asn Ser Phe Leu Val Phe Met Ala Tyr Lys Asp Arg Cys Gln Cys
                165                 170                 175

Ser Asp Ser Gln Met Tyr Glu Ile Phe Ser Ile Ile Arg Asp Leu Gly
            180                 185                 190

Ala Leu Ala Gln Val His Ala Glu Asn Gly Asp Ile Val Glu Glu Glu
```

195 200 205

Gln Lys Arg Leu Leu Glu Leu Gly Ile Thr Gly Pro Glu Gly His Val
210 215 220

Leu Ser His Pro Glu Glu Val Glu Ala Glu Ala Val Tyr Arg Ala Val
225 230 235 240

Thr Ile Ala Lys Gln Ala Asn Cys Pro Leu Tyr Val Thr Lys Val Met
245 250 255

Ser Lys Gly Ala Ala Asp Ala Ile Ala Gln Ala Lys Arg Arg Gly Val
260 265 270

Val Val Phe Gly Glu Pro Ile Thr Ala Ser Leu Gly Thr Asp Gly Ser
275 280 285

His Tyr Trp Ser Lys Asn Trp Ala Lys Ala Ala Ala Phe Val Thr Ser
290 295 300

Pro Pro Val Asn Pro Asp Pro Thr Thr Ala Asp His Leu Thr Cys Leu
305 310 315 320

Leu Ser Ser Gly Asp Leu Gln Val Thr Gly Ser Ala His Cys Thr Phe
325 330 335

Thr Thr Ala Gln Lys Ala Val Gly Lys Asp Asn Phe Ala Leu Ile Pro
340 345 350

Glu Gly Thr Asn Gly Ile Glu Glu Arg Met Ser Met Val Trp Glu Lys
355 360 365

Cys Val Ala Ser Gly Lys Met Asp Glu Asn Glu Phe Val Ala Val Thr
370 375 380

Ser Thr Asn Ala Ala Lys Ile Phe Asn Phe Tyr Pro Arg Lys Gly Arg
385 390 395 400

Val Ala Val Gly Ser Asp Ala Asp Leu Val Ile Trp Asn Pro Lys Ala
405 410 415

Thr Lys Ile Ile Ser Ala Lys Thr His Asn Leu Asn Val Glu Tyr Asn
420 425 430

Ile Phe Glu Gly Val Glu Cys Arg Gly Ala Pro Ala Val Val Ile Ser
435 440 445

Gln Gly Arg Val Ala Leu Glu Asp Gly Lys Met Phe Val Thr Pro Gly
450 455 460

Ala Gly Arg Phe Val Pro Arg Lys Thr Phe Pro Asp Phe Val Tyr Lys
465 470 475 480

Arg Ile Lys Ala Arg Asn Arg Leu Ala Glu Ile His Gly Val Pro Arg
485 490 495

Gly Leu Tyr Asp Gly Pro Val His Glu Val Met Val Pro Ala Lys Pro

```
                500                 505                 510

Gly Ser Gly Ala Pro Ala Arg Ala Ser Cys Pro Gly Lys Ile Ser Val
        515                 520                 525

Pro Pro Val Arg Asn Leu His Gln Ser Gly Phe Ser Leu Ser Gly Ser
    530                 535                 540

Gln Ala Asp Asp His Ile Ala Arg Arg Thr Ala Gln Lys Ile Met Ala
545                 550                 555                 560

Pro Pro Gly Gly Arg Ser Asn Ile Thr Ser Leu Ser
                565                 570
```